INFORMATION SERVICES INDUSTRY

RESEARCH STUDY

INPUT

# About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed ~~~~ ~~~~ uing services are provided ~~~~ computers, communicatio~~ and services.

The company carries out cc research. Working closely ~ tant issues, INPUT's staff interpret the research data, mendations and innovative

needs. Clients receive reports, presentations, access to data on which analyses are based, and continuous consulting.

Many of INPUT's professional staff members ~~~~ years' experience in their areas of ~~~~ Most have held senior management ~~~~ erations, marketing, or planning. ~~~~ nables INPUT to supply practical ~~~~ plex business problems.

~~, INPUT has become a leading ~~~ning services firm. Clients include ~~~~world's largest and most techni- ~~~~anies.

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# INPUT
Planning Services for Management

# INFORMATION SERVICES INDUSTRY
# RESEARCH STUDY

Prepared For:

## SOUTHERN NEW ENGLAND TELEPHONE COMPANY
## NEW HAVEN, CONNECTICUT

AUGUST 1983

# INFORMATION SERVICES INDUSTRY
# RESEARCH STUDY

## CONTENTS

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# INFORMATION SERVICES INDUSTRY
# RESEARCH STUDY

## EXHIBITS

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I INTRODUCTION

# I INTRODUCTION

## A. OBJECTIVES AND SCOPE

- As one of the participants in the deregulation of the U.S. telephone industry and in the reorganization of AT&T, Southern New England Telephone (SNET) is in a unique position to capitalize on opportunities for revenue and growth outside its traditional business areas.

- In reviewing alternatives, SNET determined that it has had a wide range of experiences in providing data processing services on a captive basis to its own departments and users.

- In this regard, and at SNET's request, INPUT proposed a study to determine the suitability of SNET's entering the information services industry as a vendor.

- The objectives of this study project have been to:

    - Gather and analyze data on the information services industry appropriate to SNET's needs and capabilities.

    - Identify the best opportunities for SNET to enter this industry in order to meet stated business objectives.

- Position SNET for expansion within this industry.

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## B.    RESEARCH METHODOLOGY

- INPUT, in support of this project, has used a variety of secondary research sources and interviews with SNET management personnel and senior INPUT consultants.

- Senior INPUT consultants conducted 12 on-site interviews with SNET management personnel, as shown in Exhibit I-I.

- The SNET personnel were extremely cooperative and contributed helpfully to the research study.

- Exhibit I-2 contains a partial list of recent INPUT reports that have been used as sources for secondary research.

EXHIBIT I-1

## SNET PERSONNEL INTERVIEWED

- Corporate Planning

  - E. William Kobernusz, Division Manager

- Sonecor Systems

  - James J. Pitchell, Director Consulting Services

- Information Systems

  - Ross L. Miller, Vice President

  - Noreen T. Haffner, Division Manager CRIS

  - Alan P. Haesche, Division Manager Interdepartmental DP

  - Robert F. Spry, Division Manager Computer Operations

  - John J. Cassulo, District Manager Planning

  - Karen A. Ahern, District Manager Systems Support

  - Dean Boissoneau, Senior Technical Consultant

- Directory

  - Abbott H. Davis, Jr., Vice President

  - Leon F. Wendelowski, District Manager EIS Group

- Technical Planning

  - Frank E. Wollensack, Vice President

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EXHIBIT I-2

SECONDARY RESEARCH MATERIAL

- INPUT Reports (Partial List)

    - User Planning Service Annual Report

    - U.S. Information Services, Markets, 1982-1987

    - Banking and Finance

    - Insurance Agents and Brokers

    - New Processing Opportunities in Banking

    - Opportunities in Discrete Manufacturing

    - Market Opportunities in Network Services

    - Personal Computer Software Market Opportunities

    - Turnkey Systems Opportunities, 1979-1984

    - ADAPSO Annual Report - 1982

II MARKET OVERVIEW

## II  MARKET OVERVIEW

- The information services industry has a projected 1983 market size of $31 billion and is comprised of four major segments:

    - Processing services.

    - Professional services.

    - Software products.

    - Integrated systems.

- Exhibit II-1 shows the projected market size for each of the segments for 1983.

- The information services industry grew at a rate of 16% in 1982, less than the 18% average annual growth rate (AAGR) experienced for the 10-year period ending December 1981.  The market in 1983 is expected to grow 19%.

- Processing services, with a 1982 market size of $11.4 billion, is composed of three sectors:

    - Remote computing services, which makes up 50% of the processing services segment.

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EXHIBIT II-1

INFORMATION SERVICES INDUSTRY REVENUE AND
SHARE BY SEGMENT, 1983



Processing
Services

42%
$13.0

Software
Products

24%
$7.5

Integrated
Systems

14%
$4.3

Professional
Services

20%
$6.2
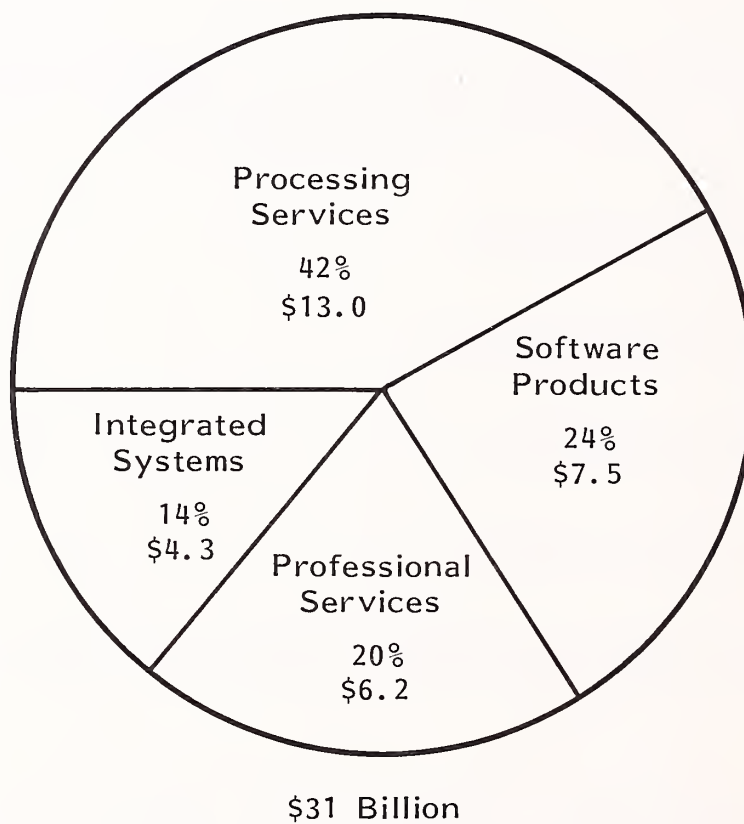
$31 Billion

- Batch processing (37%).

- Facilities management (13%).

• The professional services segment currently has a market size of $5.5 billion and is composed of four sectors:

  - Programming and analysis, which makes up 75% of the professional services segment.

  - Consulting, 11%.

  - Facilities management, 9%.

  - Education, 5%.

• Software products also has a market size of $5.5 billion and is comprised of two sectors:

  - Applications, which makes up 53% of the software products segment.

  - Systems, 47%.

• The integrated systems segment has a market size of $3.5 billion and is comprised of two sectors:

  - CAD/CAM, which makes up 23% of the integrated systems segment.

  - All other at 77%.

• Of the four information services segments, only professional services exhibited a profit margin below 10% in 1980 and 1981. This is due to the fact that a very large percentage of this market segment is directed to federal govern-

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ment activities where profit margins are dictated by contract and set lower than commercial rates. Only software products showed an improved profit margin in 1981 compared to 1980. Exhibits II-2 and II-3 illustrate these profit margin comparisons.

EXHIBIT II-2

## PROFIT MARGINS BY SEGMENT



Percent of Revenue
74 Public Companies

☐ 1980

▨ 1981

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EXHIBIT II-3

- 10 -

PROFIT MARGINS BY SEGMENT



Percent of Revenue
74 Public Companies

☐ 1980
▨ 1981
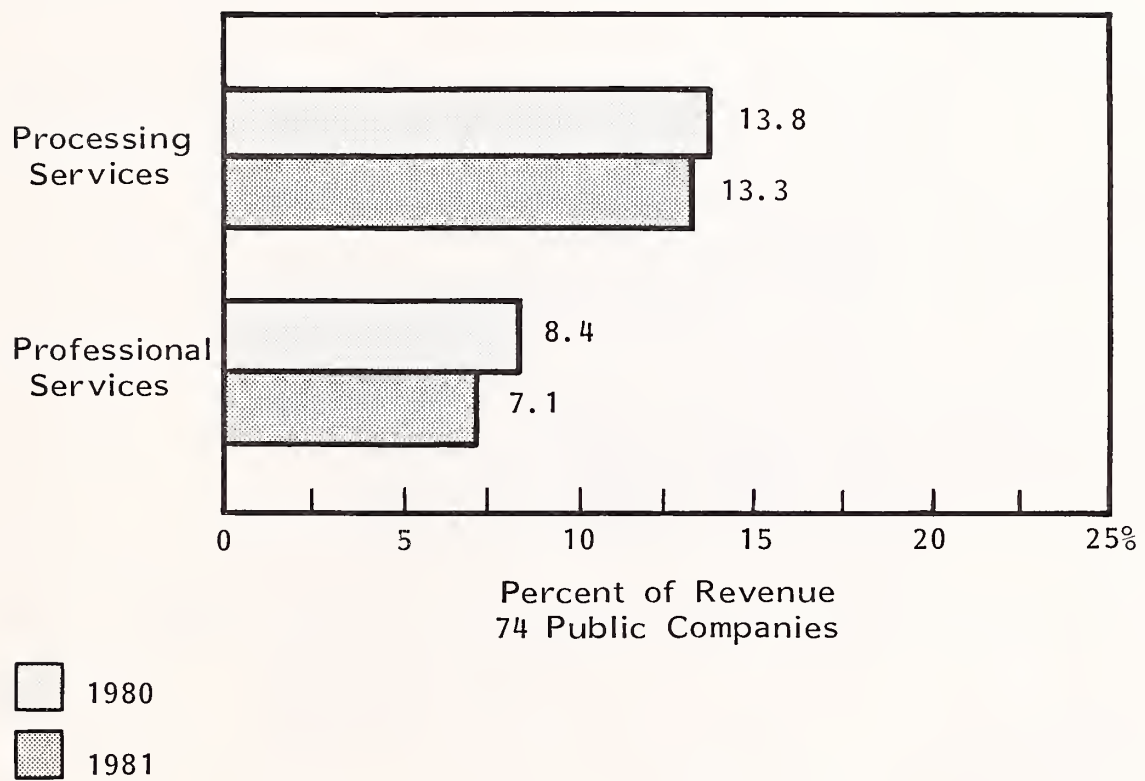
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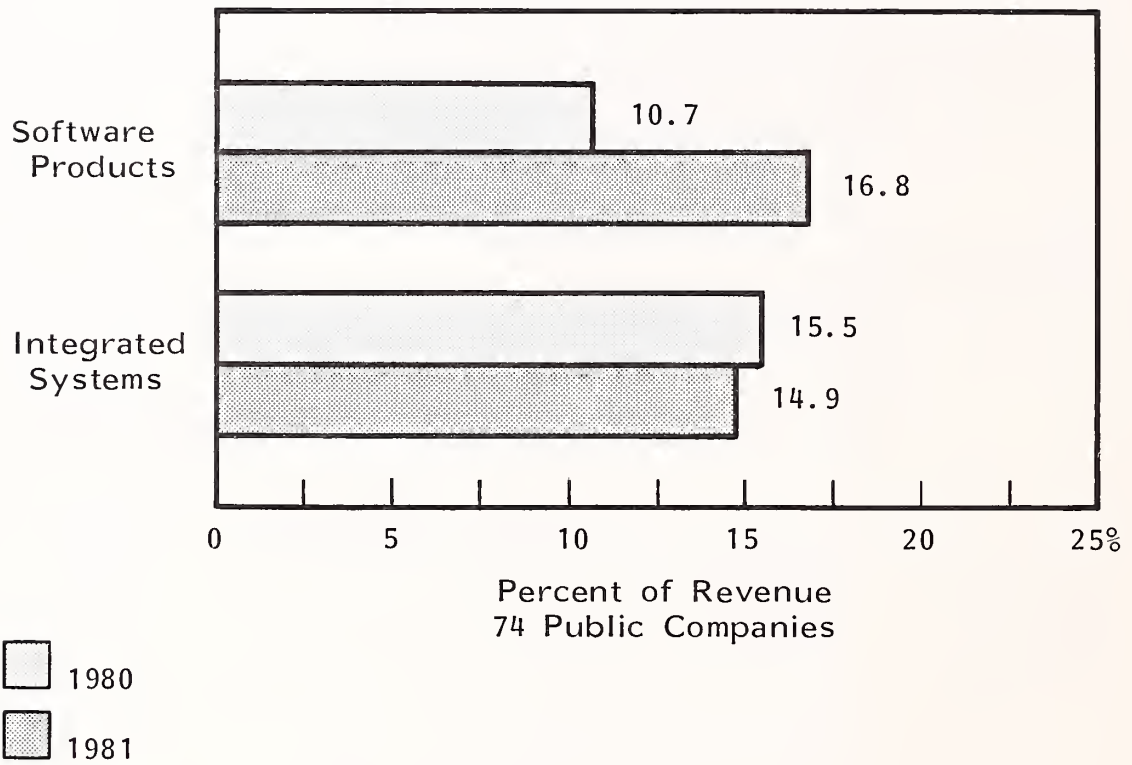
# III MARKET GROWTH PERSPECTIVE

# III    MARKET GROWTH PERSPECTIVE

- For the 10-year period ending December 1981, the U.S. information services market achieved an 18% AAGR. The sharp pullback of the entire economy reduced the 1982 services performance to a growth rate of 16%.

- This downturn is not expected to reverse completely in 1983, which is shaping up as a transition year from a recession economy to a recovery in 1984. INPUT does not expect the information services industry to recover fully until 1985.

- From 1982 to 1987, INPUT expects the information services industry to grow at an average annual rate of 24%, or from $25.9 billion to $74.9 billion. As can be seen from Exhibits III-1 and III-2, this expected growth compares favorably to several of the basic industries such as chemicals and rubber, as well as to other high technology industries such as computers and semiconductors.

- The 24% AAGR for 1982 to 1987 also exceeds actual growth for 1982 and expected growth for 1983, 16% and 19% respectively. Exhibit III-3 shows the expected market share for each of the four information services segments in 1987.

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EXHIBIT III-1

GROWTH RATE COMPARISON WITH
OTHER INDUSTRIES, 1982-1987
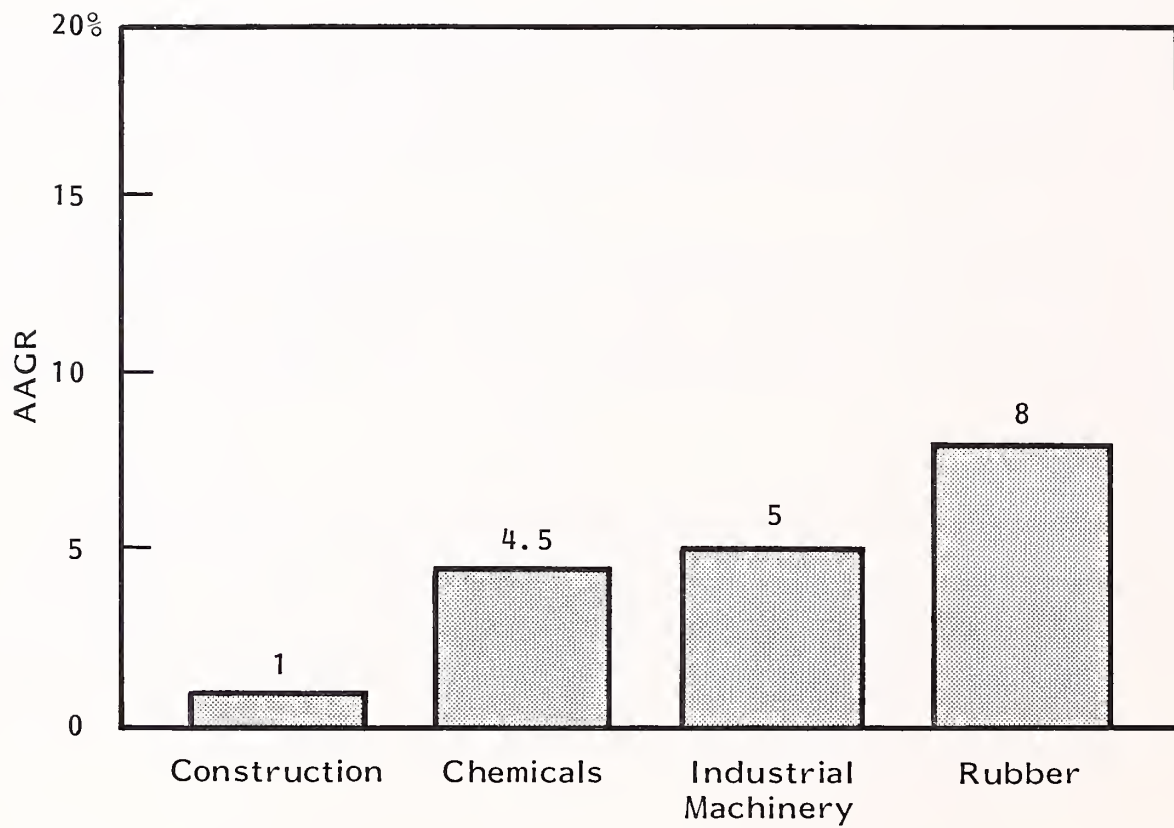


SOURCE: U.S. Industrial Outlook, 1982

EXHIBIT III-2

## GROWTH RATE COMPARISON WITH
## OTHER INDUSTRIES, 1982-1987
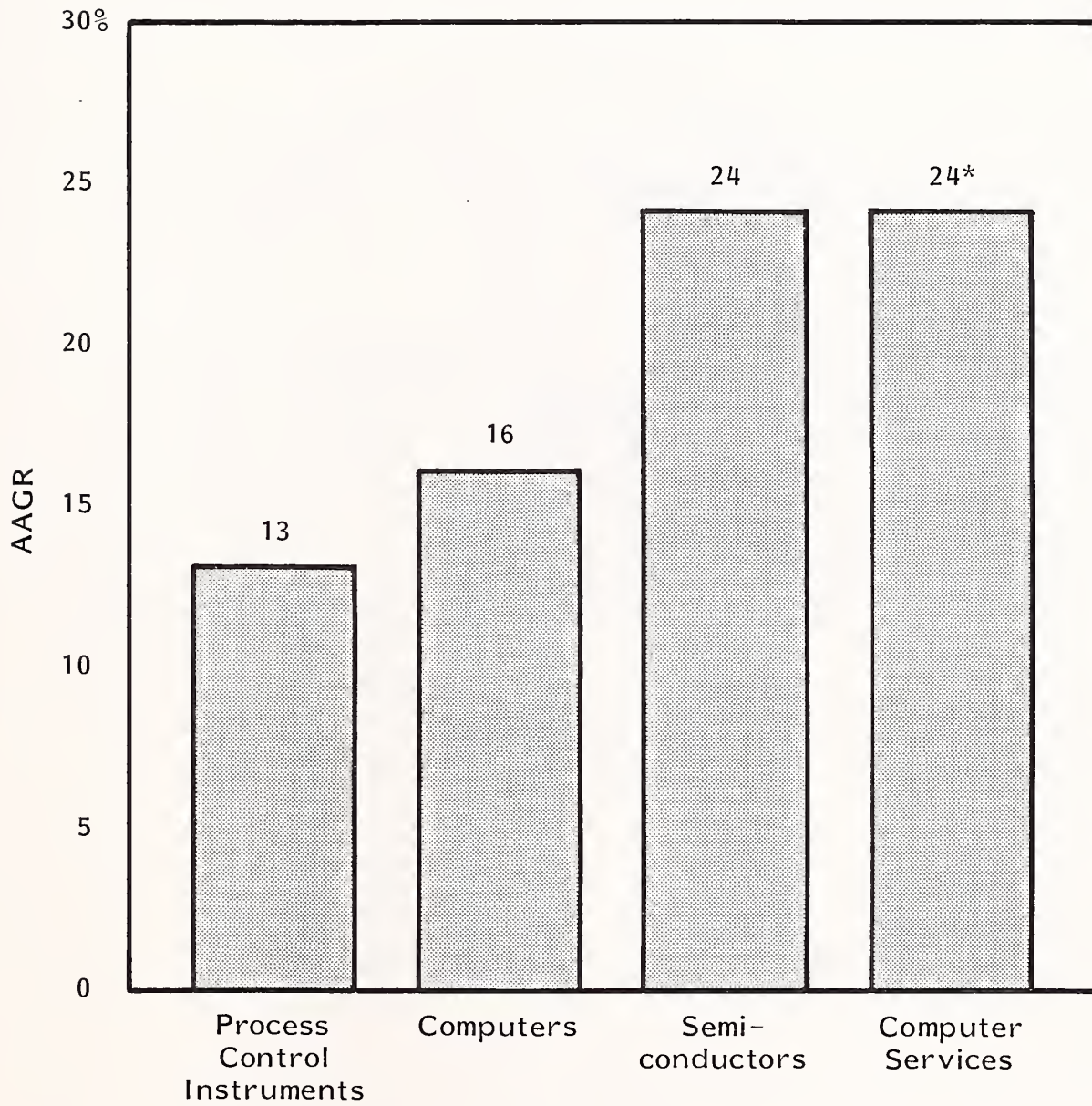


SOURCE: U.S. Industrial Outlook, 1982
* SOURCE: INPUT

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EXHIBIT III-3

## INFORMATION SERVICES INDUSTRY
## REVENUE AND SHARE BY SEGMENT

1987



$75 Billion

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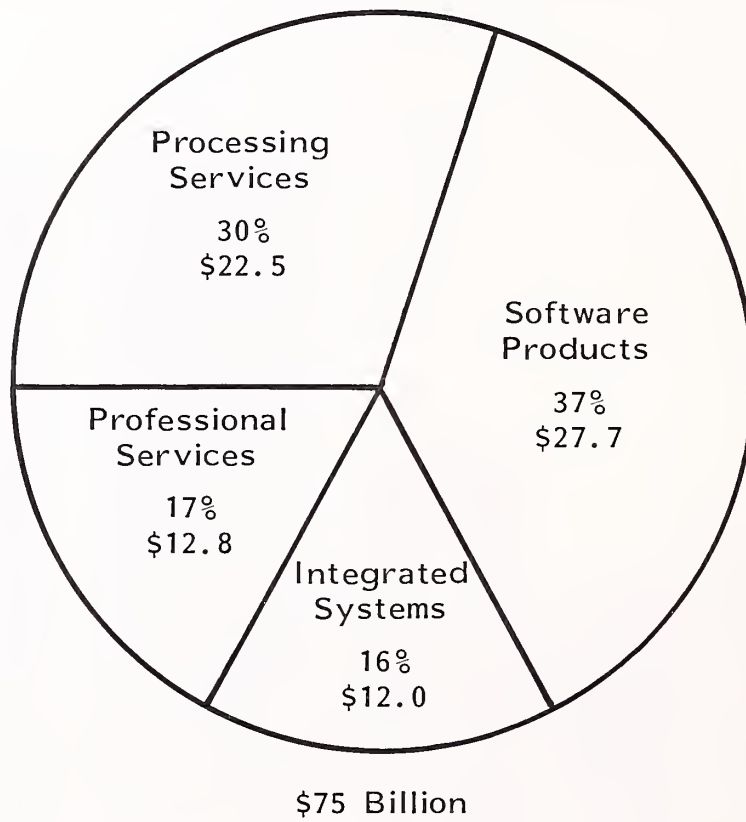
## A.    SOFTWARE PRODUCTS

- Of the four information services segments, the fastest growing is software products. It is expected to capture 37% of the information services market in 1987, up from 24% in 1983, and to achieve a 38% AAGR for the 1982-1987 period. Exhibit III-4 shows the expected growth of software products by sectors.

- One major force in the growth of software products is the explosion of personal computer sales. Personal computer software products will grow from $600 million in 1982 to $3.7 billion by 1987.

- The software products market will be characterized by integrated product lines and expanded channels of distribution. Opportunities will continue for providing software for microcomputer systems. In addition, acquisition activity will increase as the industry consolidates.

- Hurdles which must be overcome to compete effectively in the software products segment include:

    - Continuous research efforts to develop the next generation of software.

    - Competitors with strong financial positions.

    - Diverging markets catering to systems and applications software.

EXHIBIT III-4

## SOFTWARE PRODUCTS GROWTH
### 1982-1987



**1987**
**$27.5 Billion, 38% AAGR**

Systems
$11.7
35% AAGR

$1.5
38% AAGR

$2.2
47% AAGR

Applications
$15.9
40% AAGR

Systems
$2.6

$0.3

$0.3

Applications
$2.9
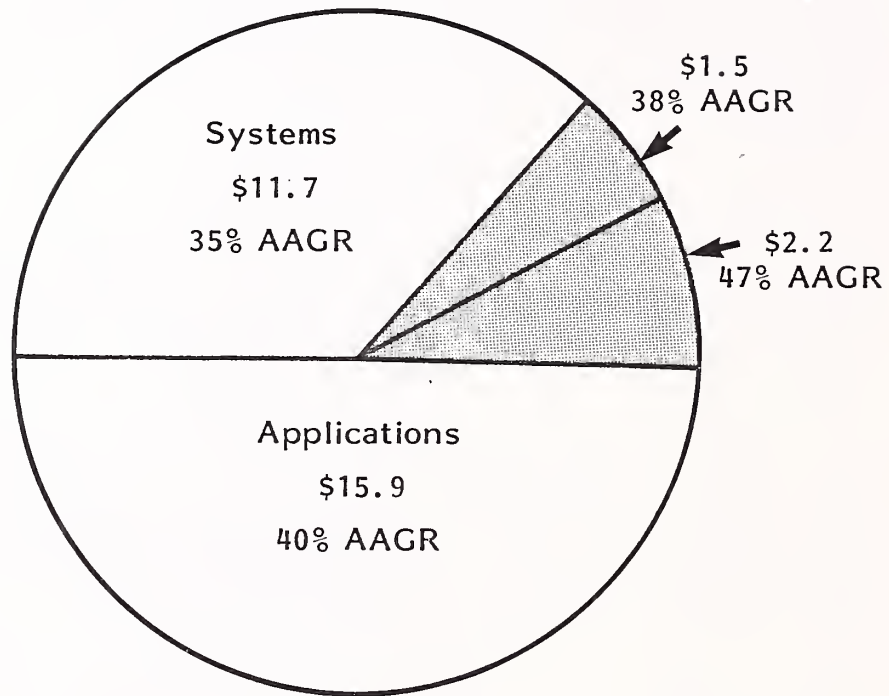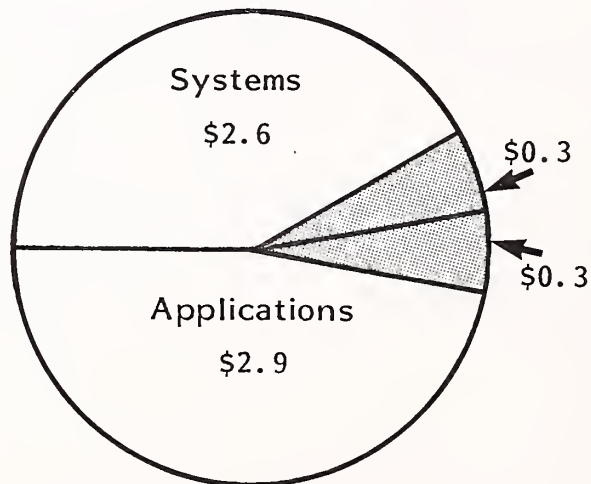
**1982**
**$5.5 Billion**

▨ Personal Computer

## B.    INTEGRATED SYSTEMS

- After software products, the next fastest growing information services segment is integrated systems.  Its AAGR for the 1982-1987 period is 29%, capturing 16% of the information services market in 1987, up from 14% in 1983.  Exhibit III-5 shows the expected growth of integrated systems by sector.

- Growth for integrated systems is expected to come largely from industry-specialized systems.  This sector is boosted by a rapidly developing personal-computer-based integrated systems market.

- Opportunities in the integrated systems segment will come from providing more interfaces, new methods of customer support, and increasing revenue from current system maintenance and customer support.

- Integrated systems vendors will face increasing competition and challenges from:

    - Microcomputer and personal-computer-based systems offered by small, startup companies specializing in very narrow market segments.

    - Hardware manufacturers that are beginning to integrate industry-specific applications packages with their hardware in direct competition with some of their OEMs (e.g., Prime Computer).

    - RCS vendors who recognize that they must compete in this market or lose business.

    - In addition, the high labor content of customer support will put pressure on cost reduction efforts and service pricing.

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EXHIBIT III-5

INTEGRATED SYSTEMS GROWTH

1982-1987

Other

$9.5

29% AAGR

CAD/CAM

$2.9
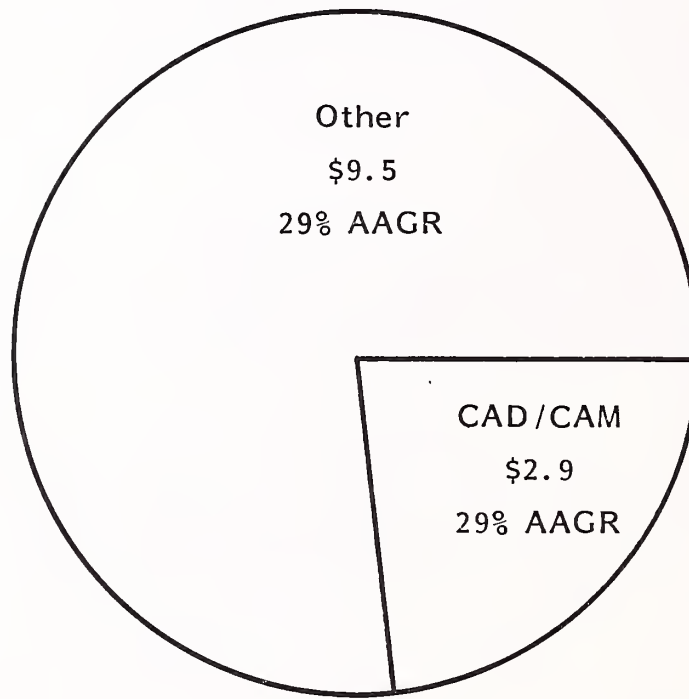
29% AAGR

1987

$12.4 Billion, 29% AAGR

Other

$2.7

CAD/CAM

$0.8
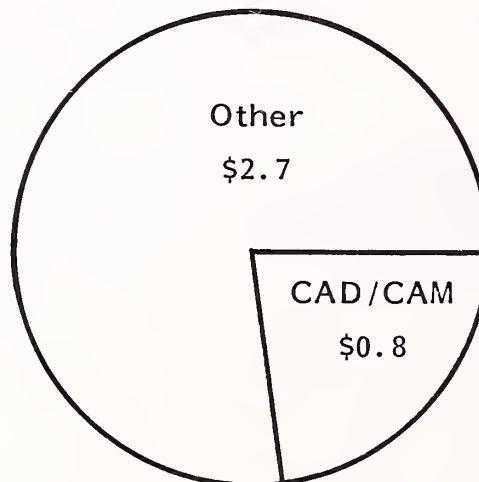
1982

$3.5 Billion

## C.    PROFESSIONAL SERVICES

- Professional services is expected to grow at an 18% average rate from 1982 to 1987. This segment is expected to capture 17% of the information services market in 1987, down from 20% in 1983. Exhibit III-6 shows the expected growth of professional services by sector.

- Professional services is the most concentrated of the information services segments. Two-thirds of all professional services revenue is obtained by firms over $10 million in size.

- Opportunities will arise in this information services segment primarily as a result of:

  - Market interest in development of large, complex systems with expanded on-line facilities that require skills not usually found in-house and that encompass applications not offered by software product vendors.

  - A trend toward increased intra-industry cooperation among clients for the purpose of joint development of systems too costly to be funded individually.

- Historically, the professional services segment has been characterized by low profit margins. Continuously changing technology and varied modes of delivery will present barriers to effective competition.

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EXHIBIT III-6

## PROFESSIONAL SERVICES GROWTH
### 1982-1987



FM
$0.8
AAGR 10%

Programming
and Analysis

$9.3
AAGR 18%

Consulting
$1.5
AAGR 21%

Education
$0.9
AAGR 24%

1987
$12.5 Billion, AAGR 18%



FM
$0.5

Programming
and Analysis

$4.2

Consulting
$0.6

Education
$0.3
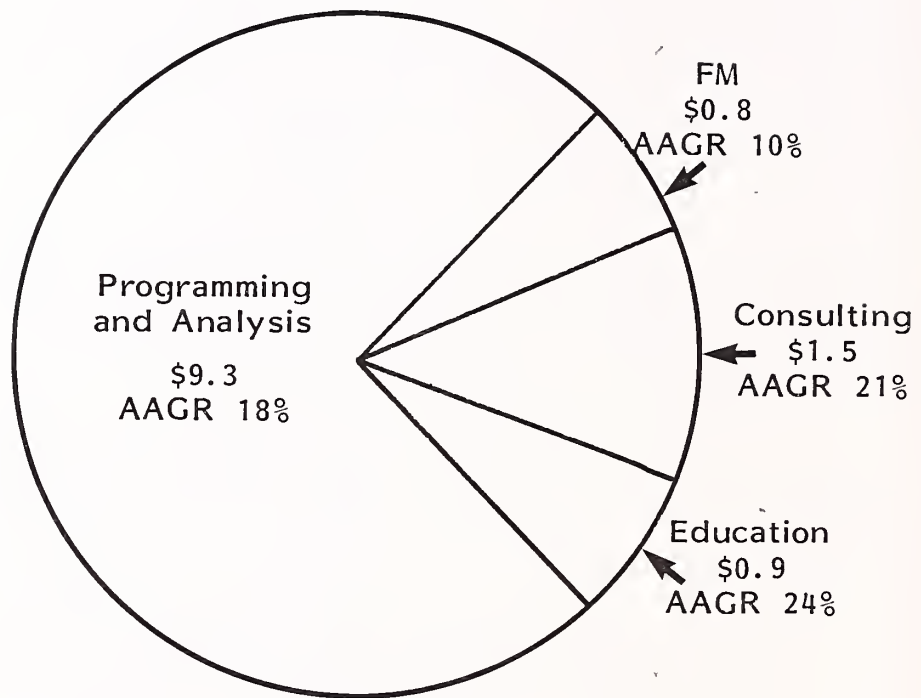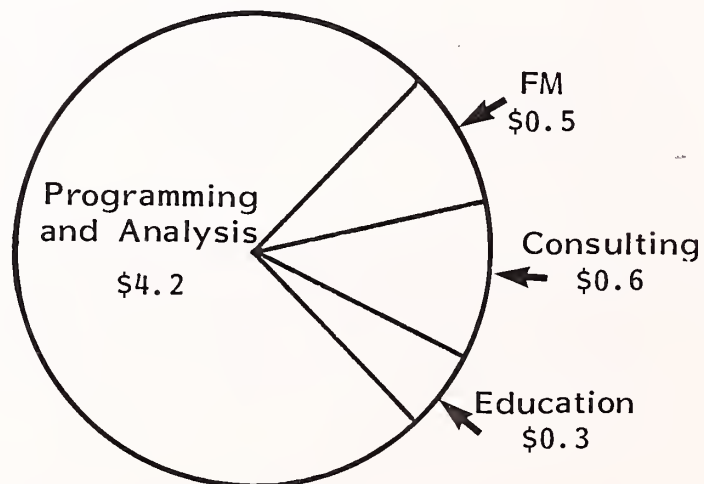
1982
$5.5 Billion

## D. PROCESSING SERVICES

- Processing services is expected to grow at a 14% average annual rate from 1982 to 1987. A market share decline is expected from 42% in 1983 to 30% in 1987. Exhibit III-7 shows the expected growth of processing services by sector.

- Besides the slowdown in its growth, the processing services segment will be hindered by:

  - Higher communications costs.

  - Increased competition from minicomputer and microcomputer systems.

  - Reentry of IBM as a competitive force.

  - Hardware/software upgrade costs.

  - A shift of large-account business to in-house processing.

- Opportunities will exist, however, for vendors to capitalize on industry-specific know-how.

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EXHIBIT III-7

# PROCESSING SERVICES GROWTH

## 1982-1987



FM
$3.5
18% AAGR

Batch
$6.6
9% AAGR

RCS
$12.3
17% AAGR
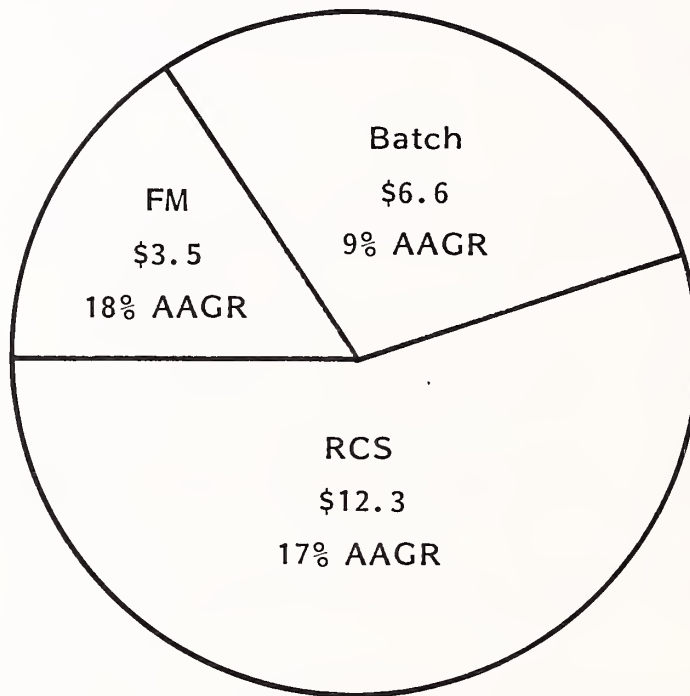
1987
$22.4 Billion, 14% AAGR



FM
$1.5

Batch
$4.2

RCS
$5.7
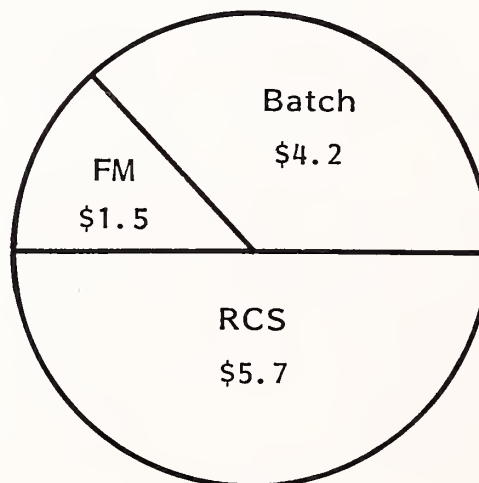
1982
$11.4 Billion

# IV MARKET ENTRY SELECTION CRITERIA
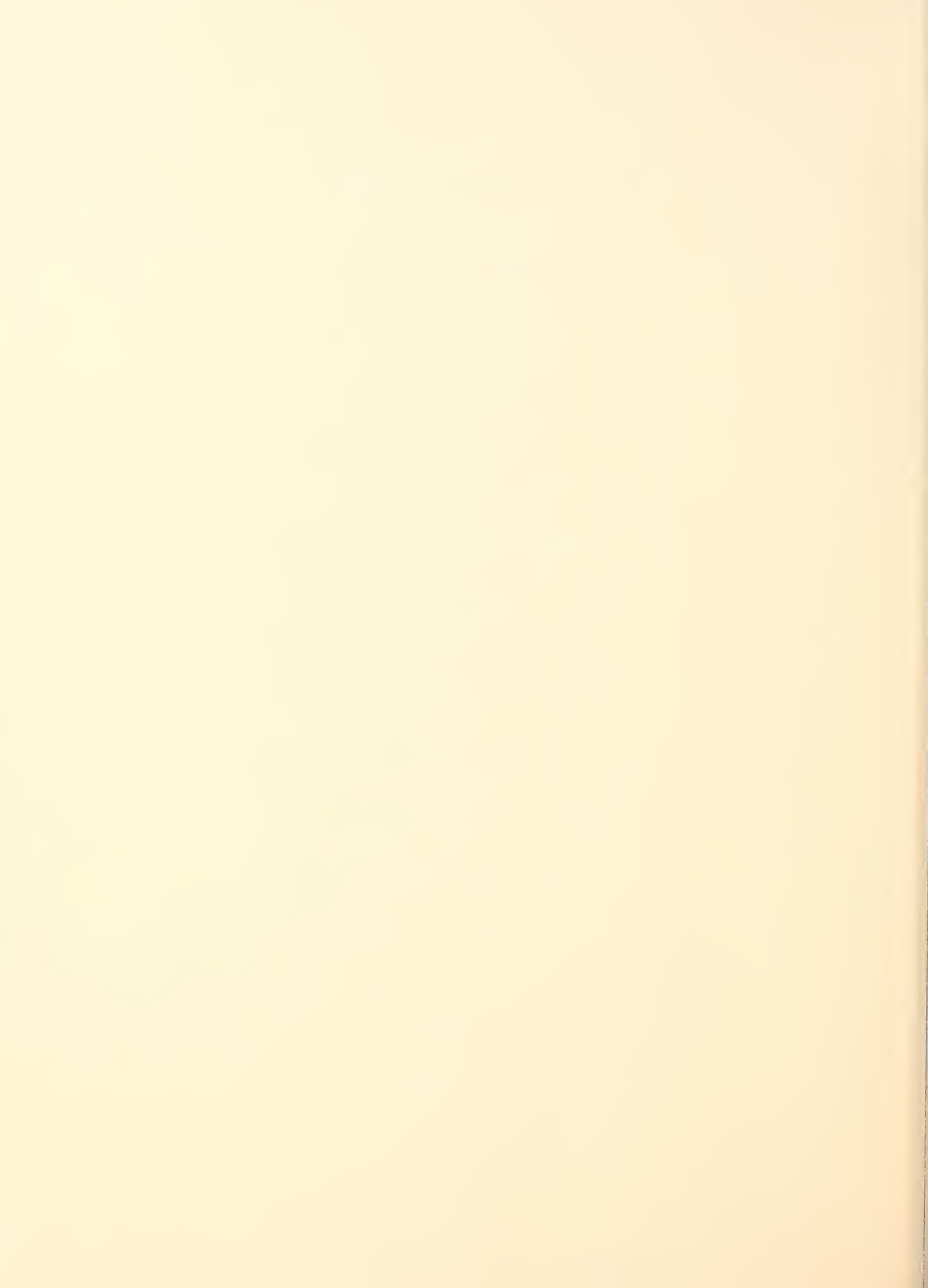
# IV    MARKET ENTRY SELECTION CRITERIA

- A number of selection screens based on market and economic attractiveness, fit with corporate strategic goals and match with organizational capabilities have been provided by SNET personnel.

- These selection screens and their application to market entry opportunities are reviewed in the following paragraphs.

## A.    MARKET ATTRACTIVENESS SCREENS

- SNET has specified an industry segment size of at least $1 billion by 1987.

- The potential has been specified as being greater than 10% growth in revenue and 13% growth in profit.

- There are clear and unmet customer needs.

## B.    STRATEGIC FIT

- To be considered, the market opportunities must satisfy certain strategic requirements that basically:

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-   Contribute to a telecommunications portfolio and enhance the SNET image as a total communications company.

-   Build on the competencies and resources of SNET and, more particularly, ISO.

## C.  MATCH WITH CAPABILITIES

●   The primary strengths of SNET Corporate, in support of an entry into the information services business, are:

-   Extensive knowledge of the communication industry and a recognized name within that industry.

-   A large customer base and a recognized name within Connecticut.

-   A strong financial position and a management committed to expanding and enhancing the company.

-   A strong service orientation that includes training and consulting experience.

●   The major strengths of ISO in support of marketing information services include:

-   A large-scale IBM capability that is highly regarded.

-   A strong operational management that is also service oriented.

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- A wide range of technical skills and experience including network and a variety of applications software systems.

- Being accustomed to dealing with large volumes of data at low levels of detail.

## D. COMPETITIVE POSITION

● Another screen for market entry deals with SNET's ability to establish a clearly superior competitive position.

● This competitive position is to be measured by:

- A clear and differential advantage.

- An opportunity to fuse a fragmented market.

- A potential to capture a significant market share.

## E. ECONOMIC ATTRACTIVENESS

● The final screen for SNET entry into the information services market deals with some of the economic factors.

● The market must be easy to enter, with a relatively short startup time and realistic capital requirements.

● There must be a substantial profit potential that includes:

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- Profit after tax greater than 12%.

- Return on equity greater than 17%.

● There is also a requirement for minimum financial exposure.

## F.    CONCERNS

● While acknowledging the strengths of both corporate SNET and ISO, there are concerns expressed by SNET personnel during the interviews and as viewed by INPUT.

● The concerns expressed by SNET basically deal with marketing and managing a business in a high technology and highly competitive industry.

● A concern was also raised about the ability of ISO to maintain "arm's length" relationships with the regulated entity.

● INPUT, at this point, shares the concern regarding SNET's lack of marketing experience and ability to be responsive to the opportunistic requirements of the information services marketplace.

V SELECTED MARKET OPPORTUNITIES

# V    SELECTED MARKET OPPORTUNITIES

## A.    MARKET SEGMENTATION

- For the purposes of this study, the segments of the information services industry that have been selected for SNET consideration are:

    - Processing services:  RCS and batch.

    - Professional services:  education and all other.

    - Software products:  applications software only.

    - Integrated systems:  function specific and industry specific.

- The end-user market segments that have been considered are:

    - Discrete manufacturing.

    - Process manufacturing.

    - Transportation.

    - Utilities.

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- Banking and finance.

- Insurance.

- Medical.

- Education.

- Retail.

- Wholesale.

- State and local government.

- Services.

● Appendix A provides a description of the market segment, opportunity, and requirements for most segments.

● Exhibit V-1 shows the 1982 user expenditures by information services industry segment of all the market segments listed.

● The discrete manufacturing sector has user expenditures above the average in all segments.

● Banking and finance has well above average expenditures in all segments except professional services.

● Process manufacturing is above average on processing services and integrated systems.

● Insurance is well above average in expenditures for applications software.

EXHIBIT V-1

USER EXPENDITURE FORECAST - 1982 ($ millions)

| | PROCESSING SERVICES | | PROFESSIONAL SERVICES | | SOFTWARE PRODUCTS | INTEGRATED SYSTEMS | |
| | RCS | BATCH | EDUCATION | ALL OTHER | APPLICATION SOFTWARE | FUNCTION SPECIFIC | INDUSTRY SPECIFIC |
|---|---|---|---|---|---|---|---|
| Discrete Manufacturing | $ 746 | $ 494 | $ 60 | $ 704 | $ 494 | $ 255 | $ 706 |
| Process Manufacturing | 485 | 723 | 37 | 394 | 187 | 101 | 282 |
| Transportation | 129 | 68 | 7 | 96 | 98 | 51 | 95 |
| Utilities | 332 | 84 | 15 | 198 | 54 | 31 | 89 |
| Banking and Finance | 1,141 | 949 | 23 | 334 | 644 | 115 | 363 |
| Insurance | 238 | 148 | 14 | 304 | 428 | 131 | 70 |
| Medical | 249 | 249 | 0 | 112 | 192 | 77 | 98 |
| Education | 59 | 67 | 0 | 94 | 45 | 20 | 54 |
| Retail | 487 | 248 | 7 | 145 | 182 | 121 | 101 |
| Wholesale | 228 | 348 | 7 | 121 | 287 | 110 | 120 |
| State and Local Government | 81 | 100 | 52 | 948 | 43 | 21 | 27 |
| Services | 664 | 342 | 0 | 33 | 128 | 84 | 215 |
| Total | $4,839 | $3,820 | $222 | $3,483 | $2,782 | $1,117 | $2,220 |

- Exhibit V-2 shows the user expenditures by market segment forecast for 1987.

- Again, in 1987, the major consumers of information services will be the market segments of discrete and process manufacturing, banking and finance, and insurance.

- Exhibit V-3 identifies (with a mark of 0) those market sectors that satisfy the SNET selection criteria of 1982-1987 AAGR greater than 15%. It also identifies (with a mark of X) those market sectors that satisfy the market/service segment 1987 expenditures greater than $1 billion. As indicated, there are 17 cells where the two major selection criteria are satisfied.

- It is important, however, that SNET select market segments where there are clear and preferably multiple opportunities for success and a reasonable progression in the offering of products and services.

- Exhibit V-4 takes yet another look at the 1987 expenditure forecast data and average annual growth rates by noting (with an 0) those cells whose growth rate is predicted to be above the average of the industry segment where the opportunities for success are going to be the highest.

- These market sectors are banking and finance and manufacturing - both discrete and process.

## B.    AREAS OF OPPORTUNITY

- Certain market sectors have been removed from further consideration in order to focus more clearly on areas of opportunity.

- The market segments rejected include:

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EXHIBIT V-2

USER EXPENDITURE FORECAST - 1987 ($ millions)

| | PROCESSING SERVICES | | PROFESSIONAL SERVICES | | SOFTWARE PRODUCTS | INTEGRATED SYSTEMS | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | RCS | BATCH | EDUCATION | ALL OTHER | APPLICATION SOFTWARE | FUNCTION SPECIFIC | INDUSTRY SPECIFIC |
| Discrete Manufacturing | $1,624 | $741 | $195 | $1,874 | $2,927 | $875 | $2,922 |
| Process Manufacturing | 1,173 | 1,647 | 104 | 1,069 | 1,047 | 319 | 1,041 |
| Transportation | 275 | 98 | 16 | 178 | 731 | 142 | 248 |
| Utilities | 642 | 120 | 46 | 520 | 218 | 100 | 233 |
| Banking and Finance | 2,860 | 1,328 | 72 | 957 | 3,794 | 350 | 1,401 |
| Insurance | 484 | 206 | 39 | 736 | 1,905 | 347 | 243 |
| Medical | 619 | 383 | 0 | 279 | 1,215 | 245 | 393 |
| Education | 83 | 81 | 0 | 172 | 132 | 46 | 130 |
| Retail | 1,020 | 334 | 15 | 259 | 935 | 476 | 343 |
| Wholesale | 416 | 480 | 13 | 227 | 1,512 | 405 | 404 |
| State and Local Government | 136 | 152 | 120 | 1,697 | 130 | 53 | 64 |
| Services | 1,414 | 470 | 0 | 69 | 641 | 353 | 900 |
| Total | $10,764 | $6,040 | $620 | $8,037 | $15,187 | $3,711 | $8,322 |

EXHIBIT V-3

## MARKET SELECTION BY DELIVERY MODE

| | PROCESSING SERVICES | | PROFESSIONAL SERVICES | | SOFTWARE PRODUCTS | INTEGRATED SYSTEMS | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | RCS | BATCH | EDUCATION | ALL OTHER | APPLICATION SOFTWARE | FUNCTION SPECIFIC | INDUSTRY SPECIFIC |
| Discrete Manufacturing | X | | | X | X | O | X |
| Process Manufacturing | X | X | | X | X | O | X |
| Transportation | O | | | | O | O | O |
| Utilities | | | | O | O | O | O |
| Banking and Finance | X | | | O | X | O | X |
| Insurance | | | | O | X | O | O |
| Medical | O | | O | O | X | O | O |
| Education | | | | | O | O | O |
| Retail | X | | | | O | O | O |
| Wholesale | | | O | | X | O | O |
| State and Local Government | | | | | O | O | O |
| Services | X | | | | O | O | O |
| Average AAGR | 17% | 9% | 24% | 18% | 40% | 27% | 30% |

Legend: O = 1982-1987 AAGR greater than 15%
X = Market/service segment 1987 expenditures greater than $1 billion

EXHIBIT V-4

## MARKET SELECTION BY DELIVERY MODE

| | PROCESSING SERVICES | | PROFESSIONAL SERVICES | | SOFTWARE PRODUCTS | INTEGRATED SYSTEMS | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | RCS | BATCH | EDUCATION | ALL OTHER | APPLICATION SOFTWARE | FUNCTION SPECIFIC | INDUSTRY SPECIFIC |
| Discrete Manufacturing | X | | | X | X | | X |
| Process Manufacturing | X | X | | X | X | | X |
| Transportation | | | | | | | |
| Utilities | | | | | | | |
| Banking and Finance | X | O | | | X | | X |
| Insurance | | | | | O | | |
| Medical | | | | | X | | |
| Education | | | | | | | |
| Retail | O | | | | | | |
| Wholesale | | | | O | O | | |
| State and Local Government | | | | | | | |
| Services | O | | | | | | |
| Average AAGR | 17% | 9% | 24% | 18% | 40% | 27% | 30% |

Legend: O = Market/service segment 1987 greater than $1 billion

X = AAGR greater than or equal to service segment average

- Process manufacturing: the number of opportunities in New England are extremely limited, and the companies require detailed and extensive applications expertise and support.

- Transportation: does not satisfy the SNET selection criteria.

- Medical: highly specialized application and support requirements.

- Education: does not satisfy the SNET selection criteria.

- State and local government: does not satisfy the SNET selection criteria.

- Services: does not satisfy the SNET selection criteria.

- Appendix B lists specific opportunities that have been considered but rejected.

- The remaining market segments for further consideration are:

  - Discrete manufacturing.

  - Utilities and communications.

  - Banking and finance.

  - Insurance.

  - Retail.

  - Wholesale.

- Exhibit V-5 presents a matrix of opportunities by market segment and delivery mode.

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# EXHIBIT V-5

## AREAS OF OPPORTUNITY

| | DISCRETE MANUFACTURING | UTILITIES AND COMMUNICATIONS | BANKING AND FINANCE | INSURANCE | RETAIL | WHOLESALE |
|---|---|---|---|---|---|---|
| Processing Services | X | | | | | |
|   Billing | | X | | X | | |
|   Order Entry/Inquiry | | X | | | X | X |
| Network Services | X | X | X | X | X | X |
| Professional Services | | | | | | |
|   Consulting | X | X | X | X | | |
|   Training | | X | | | X | X |
| Software Products | | | | | | |
|   Billing | | X | | X | | |
|   Communications | | X | | | | |
| Integrated Systems Small-to-Medium-sized Businesses | X | X | X | X | X | X |

- Discrete manufacturing:

    - Represents the largest number of opportunities across all service segments in New England.

    - There are significant requirements for applications software products dealing with inventory management and forecasting.

    - Productivity improvement tools, e.g., CAD/CAM, will grow rapidly.

    - Communications and processing among suppliers, manufacturers, and distributors to improve the accuracy of the communication at a decreased cost is a major goal of this industry.

- Utilities and communications:

    - This market segment does not satisfy the SNET selection criteria with regard to market size and growth rate.

    - However, there is an opportunity with utility companies for SNET because they have similar processing requirements (e.g., billing) and are known to and know about SNET.

- Banking and finance:

    - As a branch banking state, Connecticut has banks with a wide variety of network and processing requirements that could be satisfied by SNET.

    - Applications software within banks is forecast to grow at greater than 40% by 1987. This will be for cash management, EFT, and decision support systems.

- Insurance:

    - Connecticut is the headquarters state for the insurance industry, which has massive in-house data processing expertise.

    - Connecticut also supports a large number of smaller insurance companies and brokers that are not nearly as well automated.

    - There is a major requirement to improve communication and data processing between insurance companies and brokers.

- Retail and wholesale:

    - Both of these market sectors are represented by a large number of establishments in Connecticut, all of which are current customers of SNET.

    - These segments have requirements for integrated systems able to deal with the problems of order entry, inventory control, purchasing, and sales forecasting.

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VI CONCLUSIONS AND RECOMMENDATIONS

# VI CONCLUSIONS AND RECOMMENDATIONS

## A. CONCLUSIONS

- An initial screening of opportunities for SNET to enter the information services industry produced six industries to serve with varying degrees of potential:

  - Discrete manufacturing.

  - Utilities and communications.

  - Banking and finance.

  - Insurance.

  - Retail.

  - Wholesale.

- Each potential industry anticipates information services expenditure growth in excess of 15% for one or more information services delivery modes and 1987 expenditure greater than $1 billion.

- Overall ratings for each of the six markets are:

**INPUT**

- High: utilities and communications.

- Medium to high: banking and finance, and insurance.

- Medium: retail.

- Low to medium: discrete manufacturing and wholesale.

- Section IV, Market Entry Selection Criteria, describes the factors used to evaluate all potential markets.

1.   UTILITIES AND COMMUNICATIONS

- SNET's knowledge, experience, and recognition in the regulated telecommunications industry could best be put to use within the utilities and communications industry.

- This industry should require the shortest startup time and should be relatively easy to enter.

- The telephone companies' strong need for computer services will not be satisfied by existing competitors, whose systems are dated.

- Potential competition will come from other Telcos trying to diversify into new markets, all vying for limited Telco expenditure budgets.

2.   INSURANCE, BANKING, AND FINANCE

- The key factors affecting SNET's opportunities to serve these two industries include the large number of banking and insurance companies operating in Connecticut, SNET's recognized name within the state, and SNET's experience in processing large volumes of information.

- However, to serve either of these two industries would require knowledge of industry operations beyond SNET's present experience.

3.   DISCRETE MANUFACTURING, RETAIL, AND WHOLESALE

- By the number of establishments alone, these three market segments represent an opportunity for SNET. They all have significant application and processing requirements as well. However, to satisfy the majority of their service needs, the vendor must have a high degree of credibility and experience in manufacturing, retail, and wholesale applications.

- INPUT believes that these market segments may represent a good growth path for SNET after a base of operation and success has been built.

B.   RECOMMENDATIONS

- INPUT recommends that SNET establish an ISO service center on a full P&L basis to:

    -   Support existing regulated application requirements.

    -   Market to and capture unregulated application requirements.

    -   Demonstrate to internal and external "watchers" that SNET has the means to be successful in the information services market.

- INPUT understands that there has been a wide range of relatively high-level discussions between SNET management and the management of other Telcos whereby SNET would sell and install required applications software.

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- INPUT recommends that this be pursued vigorously as a means of capturing a significant share of a limited market, but one where SNET is well known and highly regarded.

- INPUT understands that SNET has had discussions with third-party software companies to:

    - Sell SNET software nationwide.

    - Provide SNET with software that can be sold to identified markets in Connecticut.

- INPUT recommends that SNET continue these discussions as a means of gaining applications software marketing and support experience.

- Finally, INPUT recommends that SNET conduct detailed market research on the systems and processing requirements of:

    - The nationwide CATV industry.

    - The Connecticut banking industry.

    - Connecticut's insurance company/broker market.

APPENDIX A: MARKET SEGMENT DESCRIPTIONS

## DISCRETE MANUFACTURING

MARKET ATTRACTIVENESS

- Expenditures and growth

|  | 1981 | 1982 | 1987 | 1992 |
|---|---|---|---|---|
| Revenue (000,000) | $3,514 | $4,160 | $14,544 | $40,945 |
| AAGR | 18% | 28% | 23% | |

- Trends

  - Processes becoming more complex

  - Increasing competition, including foreign

  - Need to bring products to market faster

  - Need for extensive planning, scheduling, tracking, and accounting

- Connecticut concentration

  - 2nd in number of Connecticut business firms (8827)

  - 1st in top 1,500 SNET revenue list (382)

  - 1st in top 1,500 DUNS list (386)

  - 2nd in top 10,000 DUNS list (1714)

- Description of opportunities

  - Processing services: inventory control

  - Professional services: consulting and design for productivity aid development and large systems software

  - Integrated systems: inventory management and forecasting applications

  - Network services: providing communications and pro-cessing among suppliers, manufacturers, and distributors

Continued

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## DISCRETE MANUFACTURING

- Match with SNET capabilities
    - Recognized name in Connecticut
    - Service oriented
    - Technical skills
    - Network skills
    - Existing customer base within the industry

- Strategic fit
    - Utilizes available technology
    - Demonstrates commitment to growth
    - Enhances image in investment community

- Differential advantage
    - Computer service need has become critical for small manufacturers
    - Ability to satisfy network processing needs

ASSESSMENT OF OPPORTUNITIES

- Positive factors
    - Growing interest in software, professional services, and small systems
    - Largest and fastest growing sector
    - "Insatiable" computer services needs

- Negative factors
    - Very diverse and complex business
    - Much turnover of startups and failures
    - Requires constant upgrades of computing capability
    - Requires a knowledge of a foreign application

- Overall rating
    - Low to medium

## UTILITIES AND COMMUNICATIONS

COMMUNICATIONS

- Telephone companies
- Cellular
- Cable television

UTILITIES

- Gas
- Electric
- Water

MARKET ATTRACTIVENESS

- Expenditures and growth
  - Utilities

    |  | 1981 | 1982 | 1987 | 1992 |
    |---|---|---|---|---|
    | Revenues ($ millions) | $805 | $928 | $2,307 | $5,264 |
    | AAGR | 15% | 20% | 18% | |

  - Services (including communications)

    |  | 1981 | 1982 | 1987 | 1992 |
    |---|---|---|---|---|
    | Revenues ($ millions) | $1,314 | $1,525 | $4,078 | $9,732 |
    | AAGR | 16% | 22% | 19% | |

- Trends
  - Annual growth rate greater than 15%
  - Requirements for data-base-oriented systems
  - Ergonomic I/O designs
  - $1.1 billion microcomputer industry by 1987
  - Use of information services as a competitive tool

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## UTILITIES AND COMMUNICATIONS

- Connecticut concentration
  - Utilities
    - 8th in number of Connecticut businesses (2914)
    - 3rd in top 1,500 SNET revenue list (141)
    - 13th in top 1,500 DUNS list (30)
    - 9th in top 10,000 DUNS list (96)
  - Services (including communications)
    - 3rd in number of Connecticut businesses (8034)
    - 5th in top 1,500 SNET revenue list (131)
    - 7th in top 1,500 DUNS list (54)

- Description of opportunity
  - Processing services: large transactions including billing
  - Network services: for cable television systems
  - Professional services: Consulting on information center management and microcomputer utilization
  - Software products: sales of existing products (service orders, toll messages, directory, customer support, inventory)
  - Integrated systems: system management for CATV

- Match with SNET capabilities
  - Strong processing capability
  - Proven billing system
  - Ability to process high-volume, low level of detail transactions
  - Billing systems expertise
  - Knowledge of industry

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## UTILITIES AND COMMUNICATIONS

- Strategic fit
  - Utilizes existing hardware and software
  - Defends/enhances LOBs in communications
  - Utilizes skills and resources
  - Enhances image as a total communications company

- Differential advantage
  - Strong CATV dissatisfaction with primary current vendor
  - Could be first large-scale quality provider
  - Unmet customer needs
  - Combine CATV and telephone bills
  - Proven ability to run large volumes
  - Knowledge of industry requirements
  - Recognized name in industry

- Assessment of opportunities
  - Positive factors
    - Short start-up time
    - Easy to enter
    - Knowledge of industry
    - Recognized name
    - Competition's systems are dated
    - Strong need for computer services by telephone companies
  - Negative factors
    - Current billing system is too large
    - Possible competition from Cincinnati Bell
    - Other Telcos have systems they may try to market
    - Very diverse businesses
    - Extensive competition for Telco expenditures
  - Overall rating
    - High

BANKING AND FINANCE

MARKET ATTRACTIVENESS

- Expenditures and growth

|  | 1981 | 1982 | 1987 | 1992 |
|---|---|---|---|---|
| Revenue ($ millions) | $3,697 | $4,341 | $12,946 | $36,067 |
| AAGR | | 17% | 24% | 21% |

- Trends

  - More aggressive due to regulatory changes and increased competition from nonbanking companies

  - Increases in transaction processing

  - Movement toward application integration

  - Strong requirement for user friendly software

- Connecticut concentration

  - 12th in number of Connecticut businesses (2510)

  - 4th in top 1,500 SNET revenue list (135)

  - 5th in top 1,500 DUNS list (95)

  - 8th in top 10,000 DUNS list (186)

- Description of opportunity

  - Network services: interindustry banking (banks and retailers)

  - Professional services: software application, development of financial planning tools, and cash management processing

  - Integrated systems: personal trusts, electronic funds transfer, savings and loan planning

- Match with SNET capabilities

  - Recognized name within Connecticut

  - Existing customer base within industry

  - Training and consulting experience

  - Technical skills and experience

  - Large volume transactions

BANKING AND FINANCE

- Strategic fit
  - Opportunity to achieve significant revenue and profit growth
  - Utilize personnel resources
  - Enhances image in another "glamor" industry

- Differential advantage
  - End-to-end service to customer
  - Network and technical expertise

- Assessment of opportunities
  - Positive factors
    - Large number of independent banks within the state
  - Negative factors
    - Movement to in-house systems
    - Limited experience in banking and finance
    - Possible competition from American Bell
  - Overall rating
    - Medium to High

## INSURANCE

MARKET ATTRACTIVENESS

- Expenditures and growth

|  | 1981 | 1982 | 1987 | 1992 |
|---|---|---|---|---|
| Revenue ($ millions) | $1,554 | $1,819 | $5,397 | $13,415 |
| AAGR | 17% | 24% | 20% | |

- Trends
    - Remained strong during recession
    - Competition increasing with banking and finance sector
    - Large companies moving processing in-house
    - Industry is a target for small computers

- Connecticut concentration
    - 11th in number of Connecticut business firms (2520)
    - 7th in top 1,500 SNET revenue list (91)
    - 9th in top 1,500 DUNS list (42)
    - 7th in top 10,000 DUNS list (233)

- Description of opportunity
    - Processing services: interindustry (company and broker) communication and processing. Large volume billing services
    - Professional services: operational consulting to EDP management and training of programming and systems staff. Micro and mini to mainframe interfaces
    - Software products: billing systems to small- and medium-sized companies
    - Integrated systems: minis and micros for agency accounting and management

Continued

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## INSURANCE

- Match with SNET capabilities
  - Recognized name within Connecticut
  - Service-oriented industry
  - Extensive user of outside training and consulting
  - Industry's mainframes are predominantly IBM
  - Companies deal with large volumes of information

- Strategic fit
  - Utilizes existing processing and network capabilities
  - Utilizes skills and experience

- Differential advantage
  - Concentration of the insurance industry within the state
  - Proximity of SNET to processing requirements

- Assessment of opportunity
  - Positive factors
    - SNET experience with billing systems and procedures
    - Significant network requirements
  - Negative factors
    - Large companies strongly oriented toward in-house processing
    - Limited experience with insurance applications and requirements
  - Overall rating
    - Medium to high

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RETAIL

MARKET ATTRACTIVENESS

- Expenditures and growth

|  | 1981 | 1982 | 1987 | 1992 |
|---|---|---|---|---|
| Revenue ($ millions) | $1,227 | $1,396 | $3,781 | $10,219 |
| AAGR | | 14% | 22% | 22% |

- Trends
  - Increasing in number of establishments
  - Strong activity in remote computing and integrated systems

- Connecticut concentration
  - 1st in number of Connecticut business firms (25,865)
  - 11th in top 1,500 SNET revenue list
  - 3rd in top 1,500 DUNS list (212 firms)
  - 1st in top 10,000 DUNS list (2,318 firms)

- Match with SNET capabilities
  - Low level of detail required
  - Large volume processing
  - Respected and known business "partner"
  - Large existing customer base
  - Training and consulting experience
  - Service-oriented management
  - Network expertise

- Strategic fit
  - Enhances image as a communications company
  - Enhances existing LOBs
  - Demonstrates commitment to growth industries

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RETAIL

- Differential advantage
  - Trusted name within Connecticut
  - Network and technical expertise
  - Existing customer base
  - Experience in dealing with these customers

- Assessment of opportunity
  - Positive factors
    . Reasonable growth industry
  - Negative factors
    . Limited application knowledge
    . Existing software oriented toward large-volume processing requirements
  - Overall rating
    . Medium

- Description of opportunity
  - Processing services: order entry/inquiry
  - Network services: data communications between wholesalers and their area retailers
  - Professional services: system specifications and end-user training
  - Integrated systems: small business management, inventory control

## WHOLESALE

MARKET ATTRACTIVENESS

- Expenditures and growth

|  | 1981 | 1982 | 1987 | 1992 |
|---|---|---|---|---|
| Revenue ($ millions) | $1,146 | $1,346 | $3,910 | $9,729 |
| AAGR | | 17% | 24% | 20% |

- Trends

  - Many small businesses

  - Nationwide 44% of the revenue is from the distribution of petroleum products

  - Recent increases in purchase of integrated systems and application software

- Connecticut Concentration

  - 5th in number of Connecticut business firms (6,605)

  - 2nd in top 1,500 SNET revenue list (163)

  - 2nd in top 1,500 DUNS list (249)

  - 3rd in top 10,000 DUNS list (1,602)

- Description of Opportunity

  - Processing services: order entry/inquiry

  - Network services: data communications between wholesalers and their area retailers

  - Professional services: system specifications and end-user training

  - Integrated systems: small business management, inventory control

Continued

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## WHOLESALE

- Match with SNET capabilities
    - Low level of detail required
    - Large volume processing
    - Respected and known business "partner"
    - Large existing customer base
    - Training and consulting experience
    - Service-oriented management
    - Network expertise

- Strategic fit
    - Enhances image as a communications company
    - Enhances existing LOBs
    - Demonstrates commitment to growth industries

- Differential advantage
    - Trusted name within Connecticut
    - Network and technical expertise
    - Existing customer base
    - Experience in dealing with these customers

- Assessment of opportunity
    - Positive factors
        . Reasonable growth industry
    - Negative factors
        . Limited application knowledge
        . Existing software oriented toward large-volume pro-
          cessing requirements
    - Overall rating
        . Low to medium

APPENDIX B: OPPORTUNITIES CONSIDERED BUT REJECTED

## OPPORTUNITIES CONSIDERED BUT REJECTED

| AREA | FACTORS | |
| --- | --- | --- |
| | POSITIVE | NEGATIVE |
| Bookstore Management | • Growth Area | • Market Too Small |
| Computer Aided Education (CAI) | • Growing Need | • Too Much Missionary Work |
| Decision Support | • Large Market | • Large Company Only, No Unique Package |
| Energy Management | • Growth Area<br>• Products Just Emerging | • Very Specialized Knowledge Base |
| Federal Government | • Large, Volatile Market | • High Risk<br>• Long Lead Time<br>• Unique |
| Financial Software | • Large, Volatile Market | • Little Experience |
| Higher Education EDP Facilities Management | • ISO Management | • Soft Market |
| Manufacturing Automation | • Large, Growing Market | • High Technology<br>• Hardware Key Part of Product |
| Office Automation | • Large Market | • Competition from Integrated Systems |
| Property Management Systems | • New Products/ Service | • No Companies of Acquirable Size |
| Systems Software | • High Potential | • Hardware Expertise |
| Tax Preparation | • Extensive Market<br>• Known Customer Base | • Requires Credibility of CPA Firms |

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